

CLAIMS:

1. A method of reducing or substantially eliminating the occurrence of ghost images in a variable focus lens comprising a housing (5) in which is provided a first fluid (A) and a second fluid (B), the fluids (A,B) being non-miscible, in contact over a meniscus (14) and having different indices of refraction, the shape and/or position of said meniscus (14) being variable so as to selectively control the lens function of said variable focus lens, a portion of the inner wall of said housing (14) being contactable by said meniscus (14) during operation, which portion of said inner wall is substantially smooth, the method comprising configuring or altering the optical properties of at least a portion of the wall of said housing (5) so as to at least reduce the reflectivity thereof.
2. A method according to claim 1, wherein the optical properties of the inner and/or outer wall of the housing (5), and/or the bulk of the wall of the housing (5) is configured or altered so as to at least reduce the reflectivity thereof.
3. A method according to claim 1 or claim 2, wherein the housing (5) is formed of a substantially transparent material, and wherein at least a portion of the outer surface of said housing (5) is provided with a light-absorbing coating or layer.
4. A method according to any one of the preceding claims, wherein at least a portion of the outer surface of the housing (5) is highly scattering.
5. A method according to any one of the preceding claims, wherein the outer surface of the housing (5) is coupled with a light-absorbing outer body.
6. A method according to any one of the preceding claims, wherein the second fluid (B) is axially displaced from the first fluid (A).

7. A method according to claim 6, wherein the lens further comprises a first electrode (2) and a second electrode (12) wherein the shape of the meniscus (14) can be controlled in dependence on the application of a voltage between
5 said first electrode (2) and said second electrode (12).
8. A method according to claim 7, wherein the first electrode (2) comprises a conducting coating applied to the inner wall of the housing (5), and a light-absorbing coating is provided between the inner wall of the housing (5) and the
10 electrode (2).
9. A method according to claim 6, wherein the lens comprises a housing (125) defined by at least one side wall having an optical axis extending longitudinally through the housing (125), wherein the chamber containing the fluids (A,B),
15 which are in contact over a meniscus (15), the lens further comprising at least one pump (110) for altering the relative volume of each of the fluids (A,B) contained within the housing (125).
10. A method according to claim 9, wherein the perimeter of the meniscus (15) is
20 constrained by the side wall, and the at least one pump (110) is arranged to controllably alter the position of the meniscus (150) along the optical axis by altering the relative volume of each of the fluids (A,B) contained within the housing (125).
11. A method according to claim 9, wherein the perimeter of the meniscus (150) is
25 fixedly located on an internal surface of the housing (125), and the at least one pump (110) is arranged to controllably alter the shape of the meniscus (15) by altering the relative volume of each of the fluids (A,B) contained within the housing (125).
30
12. A method according to any one of claims 1 to 11, wherein the housing is made of a translucent and/or absorbing material.

13. A method according to any one of claims 1 to 12, wherein a light absorbing material is mixed through the housing material before it is moulded into a housing (5).
- 5
14. A method according to any one of claims 1 to 13, wherein the outer wall of the housing (5) is provided with a diffractive structure.
15. A method according to claim 14, wherein the outer wall of the housing (5) comprises a blazed Fresnel structure.
- 10
16. A method according to claim 1, wherein the housing (5) is formed of an opaque, reflective material.
- 15
17. A method according to claim 16, wherein at least the inner wall of the housing (5) is at least partially coated with an insulating material.
18. A method according to claim 17, wherein the insulating material is light-absorbing.
- 20
19. A method according to claim 1, wherein a thin, light-absorbing layer is provided between at least the inner wall of the housing (5) and an insulating layer provided thereon.
- 25
20. A method according to claim 1, wherein the optical properties of the inner wall of the housing (5), outside of the portion where the meniscus (14) is contactable in operation, is altered such that isotropic scattering occurs.
- 30
21. A method according to claim 1, wherein the housing (5) is formed of a coloured metal.

22. A method according to claim 1, wherein the housing (5) is made of a light-absorbing material.
23. A variable focus lens comprising a housing (5) in which is provided a first fluid (A) and a second fluid (B), the fluids (A,B) being non-miscible, in contact over a meniscus (14) and having different indices of refraction, the shape and/or position of said meniscus (14) being variable so as to selectively control the lens function of said variable focus lens, a portion of the inner wall of said housing (5) being contactable by said meniscus (14) during operation, which portion of said inner wall is substantially smooth, wherein the optical properties of at least a portion of the wall of said housing (5) has been configured or altered according to a method of any one of claims 1 to 22 so as to at least reduce the reflectivity thereof and thereby reduce or substantially eliminate the occurrence of ghost images during operation.
- 5
24. An image sensor having a variable focus lens comprising a housing (5) in which is provided a first fluid (A) and a second fluid (B), the fluids (A,B) being non-miscible, in contact over a meniscus (15) and having different indices of refraction, the shape and/or position of said meniscus (15) being
10 variable so as to selectively control the lens function of said variable focus lens, the image sensor further comprising means for reducing or substantially eliminating the occurrence of ghost images in said variable focus lens according to a method of any one of claims 1 to 22.
- 15
25. An image sensor according to claim 24, wherein the housing (5) is shaped such that at least some ghost images do not reach image sensor.
26. An image sensor according to claim 24 or claim 25, comprising a stop arranged and configured to intercept at least a portion of ghosting occurring as a result of
20 specular reflection of light by the housing.

24

27. An image capture device comprising a variable focus lens according to claim 23, or an image sensor according to any one of claims 24 to 26.

28. Portable telecommunications apparatus incorporating an image capture device according to claim 27.